**Literacy, Technology and TPACK Framework**

* Classroom technology has advanced beyond using technology to simply deliver instruction (textbooks, projectors, whiteboards) and now holds the potential to transform content and pedagogy. Second, technology is not educational by default, it must be used and repurposed by a competent and capable teacher, one who is skilled and confident in their technical literacy.
* Quality teaching requires developing a nuanced understanding of the complex interplays between three key sources of knowledge: technology, pedagogy, and content and how they play out in specific contexts (Mishra & Koehler, 2006; Koehler & Mishra, 2008).
* The kinds of knowledge teachers need to develop can almost be seen **as a new form of literacy** - as a collection of skills, competencies and knowledge of how to use (multi-) disciplinary knowledge, pedagogical techniques, and technological tools in their classrooms. We build upon a definition of literacy suggested by Myers (1995) as “the ability to consciously subvert signs,” implying that knowledge required for teaching is “more than just the ability to use sign systems to communicate some conventional meaning, because… literacy should be reserved for some state of agency in which one can control, even manipulate, how signs are used.” (Myers, p. 582).
* First, this definition emphasizes that teachers manipulate signs and symbols (of various kinds, language, equations, images, video, and so on). Second, this definition emphasizes the importance of teacher agency –the conscious manipulation of signs for educative or communicative purposes. Third, teachers are able to subvert these signs, implying that the sign-systems are not sacrosanct, but rather are human constructions that teachers can design and re-design for their particular context. Fourth, this definition emphasizes the value of teacher expertise, since subversion is not possible unless the teacher knows the rules of the game, and is fluent enough to know which rules to bend, which to break, and which to leave alone. Fifth, this definition emphasizes teacher creativity. As we know, the wicked problems (Rittel & Webber, 1973) of teaching with technology demand creative solutions. Most technological tools we use (Office software, Blogs, etc.) are not designed for teachers, and we have to repurpose (subvert) them for their needs.

Literacy is an active process in which individuals musts switch between producing, creating and receiving content of any form. New literacies are about not only this give and take but also about agency and autonomy. The ability to subvert signs gives the producer freedom to create signs of “one’s own.” In terms of technological literacy, the ability to subvert means the ability to manipulate, change, adapt, and repurpose technology to fit specific educational purposes.

Competencies in specific technologies and specific types of communication will serve little purpose in a world where not only technology but the way individuals communicate and express themselves takes many, very different forms. This is not to say that technological knowledge is not required for successful integration into education, rather flexible, creative, and adaptive technological knowledge is required.

To subvert technology for education teachers must be able to identify and acknowledge technology with specific pedagogical value. Unfortunately, teachers are rarely if ever trained to experiment and play with technology. It is only by understanding these new tools that teachers can learn to “subvert” them for pedagogical purposes. Such pedagogical subversion is a challenging task. It requires a new set of skills; it requires an emphasis on creativity and innovation, a willingness to suspend judgment about particular tools and technologies and a tolerance of ambiguity.